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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/767,928	12/17/96	DRYER D	AT9-96-312

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ART UNIT	PAPER NUMBER
2762	2

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 08/767,928	Applicant(s) DRYER, David et al.
	Examiner Wilbert L. Starks, Jr.	Group Art Unit 2762

☒ Responsive to communication(s) filed on _Dec 17, 1996_ _____ .

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under _Ex parte Quayle_, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire _____3_____ month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) _1-9_ _____ is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) _1-8_ _____ is/are rejected.

☒ Claim(s) _9_ _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on ___ _Dec 17, 1996_ ___ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☒ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

DETAILED ACTION

1.   Claims 1-9 have been examined.

Oath/Declaration

2.   The oath or declaration is defective. A new oath or declaration in compliance with 37

CFR 1.67(a) identifying this application by application number and filing date is required. See

MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because the signature of the inventor David C. Dryer

is a photocopy and not the original signature.

Drawings

3.   New formal drawings are required in this application because the current sketches are

unsuitable for publication and are difficult to read. Applicant is advised to employ the services of

a competent patent draftsperson outside the Office, as the Patent and Trademark Office no longer

prepares new drawings.

4.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they

include the following reference sign(s) not mentioned in the description: 306, 308, and 312.

Correction is required.

Claim Objections

5.   Claims 8 and 9 are objected to because of the following informalities:

Claim 8 recites "A computer program product *having* a computer readable medium..."

(emphasis added.) It is unknown whether the term "having", in this context, means "comprising"

or "consisting of". Correction is required. For the purposes of examination, it will be interpreted

as meaning "comprising".

Claim 8 also recites "computer readable *means*" when it is likely that "computer readable

medium" was intended. Additionally, the claim recites "computer program product means" when

"computer program product" was likely the intended statement. Correction is required.

Claim 9 recites a "computer program product *means having* computer readable *means* for

transforming said multivariate data..."(emphasis added.) This language is unclear and not precise.

For purposes of examination, that part of claim 9 will be interpreted to mean: "computer

program product comprising a computer readable medium encoded with a computer program for

transforming said multivariate data..."

Additionally, claim 9 recites "...computer program product *means having* computer

readable *means* for performing on each of said assessment variables to validate cluster

groupings."(emphasis added).

For purposes of examination, this will be interpreted to mean: "...computer program

product comprising a computer readable medium with a program encoded on it designed to

validate cluster groupings given particular assessment variables."

Appropriate correction to claims 8 and 9 is required.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7.   Claims 1 - 7 are rejected under 35 U.S.C. 101 because the claimed invention is directed toward non-statutory subject matter.

The invention is a method of assigning two or more "intelligent agents" to a group of mutually exclusive tasks. The invention has practical application.

The invention is disclosed as being implemented in a computer and, thereby, is in the technological arts.

Claim 1 is a method claim and is a series of steps. There is no pre or post computer activity of the type that would put this claim into a safe harbor since all the activity takes place inside the computer.

Analysis - The first step of the claim recites that the method includes "...receiving data assessing at least two user assessment variables for each of said plurality of tasks;..." The "receiving" activity recited there is not a pre computer activity because it is not sensed or transduced data so much as it is a set of subjectively perceived, abstract, non-physical measures of the "difficulty," the "importance," and the "frequency" of the task. The "frequency" of the task initially sounds as if it is a physical measure of something, but careful reading of the specification shows that it also

is the user's subjective perception of the task frequency and is not shown to be sensed or

transduced in any mechanically objective way. Simple data entry of such abstract numbers do not

effectively represent physical objects or occurrences in the physical world. Thus, no pre computer

activity is shown.

Ultimately, claim 1 ends with the storage of numbers associating the intelligent software

agents with specific clusters of tasks. This storage of the number occurs entirely inside the

computer and shows no post computer activity.

It was decided in *In re Gelnovatch and Arell* that "...where as here, the claims solely recite

a method whereby a set of numbers is computed from a different set of numbers by merely

performing a series of mathematical computations, the claims do not set forth a statutory

process." *In re Gelnovatch and Arell* 201 USPQ 136, 145.

Claim 1 merely discloses an algorithm without limitation to a practical application and is

nonstatutory.

Dependent claims 2-4 do not cure the defect found in claim 1 and are nonstatutory as well.

Claim 2 "transforms" the multivariate data so as to eliminate "respondent differences". This adds

no pre or post processing activity and does not cure the defect the step is purely mathematical.

Claim 3 simply discloses a univariate analysis. This adds no pre or post processing activity and

also does not cure the defect. Claim 4 merely defines one of the intelligent agents and defines the

steps in the multivariate analysis. This adds no pre or post processing activity and also does not

cure the defect in claim 1. Since no pre or post computer activity is added in claims 2-4, they

must be rejected as nonstatutory.

Independent claim 5 recites that it is a claim for a "system" for storing associations

between the intelligent agents and the computer implemented task clusters. The preamble recites

the organizational elements of a system "having" a processor means, a storage means, and an I/O

means. It is not expressly stated whether "having" means that it *comprises* these components or

consists of these components. Since the body of the claim lists more "components", the

implication is that "having", in this context, means "comprising."

Regarding the body of claim 5, the word "system" is used in a vague manner that does not

expressly show whether the claim is an apparatus claim, a product claim, or a process claim. The

specification discloses only the realization of the invention on a general purpose IBM PC

compatible computer. No special hardwares for the realization of the means recited in the body of

claim 5 are presented in the specification. Properly programmed, the general purpose computer

described in the specification is fully capable of implementing the means recited in claim 5. In the

most reasonable interpretation of the word "system," as used to refer to the body of claim 5, the

word "system" would refer to *software* modules and would not be drawn to a physical *hardware*

apparatus, since no special hardware for the realization of the means recited is presented in the

specification. For purposes of patentability, the claim can, at best, be construed to be a series of

steps to be performed on a computer.

Even construed as a series of steps, the claim shows no more pre or post processing

capability than claim 1 rejected above. The claim merely lists abstract ideas in the form of

proposed computer modules without limitation to a practical application. Claim 5 is, therefore,

rejected under 35 USC 101 as nonstatutory subject matter.

Dependent claims 6 and 7 do not cure the defects found in claim 5 and, on that basis, are

also rejected under 35 USC 101.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

9.   Claims 1, 5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Steinlicht (U.S. Patent Number 5,335,269; Dated August 02, 1994) in view of Donaghue, Jr. et

al. (U.S. Patent Number 5,467,391; Dated November 14, 1995.)

Claim 1 -- Steinlicht at column 2, lines 20-68; column 3, lines 1-26 teaches Claim 1's "A

computer implemented method of assigning each of two or more intelligent agents to one of a

plurality of mutually exclusive groups of tasks, the method comprising the steps of receiving data

assessing at least two user assessment variables for each of said plurality of tasks." Note that the

equivalent of the "user assessment variables" in Steinlicht are such considerations as a) whether

the agent group speaks English or Spanish, b) whether the agent can handle credit cards, etc.

Steinlicht at col. 8, lines 63-65 also teaches claim 1's "storing in a computer system an association

linking each of said intelligent agents with one of said mutually exclusive clusters."

Steinlicht does not, however teach claim 1's "performing multivariate analysis on said data

to derive from said plurality of tasks at least as many mutually exclusive clusters of tasks as there

are intelligent agents to assign;"

Note that this clause in claim 1 divides the tasks among the available agents, but the clause

also allows for the creation of more clusters than agents. This is the same as determining the

minimum number of agents required to perform the task. The very next clause in the claim calls

for a one-to-one linking of agents to clusters. The creation of more clusters than agents would be

an indication that more agents are required to solve the problem. The number of extra clusters

show exactly how many newly available agents are required.

Donaghue, Jr. et al. At claim 11 teaches that the use of "compiled statistics" can assist in

determining the number of agents required to service the inbound calls. The one-to-one linking of

tasks is taught in the alternative embodiment described in column 2, lines 38-41. Donaghue, Jr. et

al. discloses that the result of using statistical assignment of agents to their tasks would produce

optimized agent utilization over the prior art. (Donaghue, Jr. et al. Column 10 lines 26-29.)

It would have been obvious to a person of ordinary skill in the art at the time the invention

was made to use the statistical analysis disclosed in Donaghue, Jr. et al. to assign agents to their

tasks in Steinlicht.

Optimized agent utilization is a highly desirable feature in the intelligent agent art due to

its ability to increase the productivity of each agent. Donaghue, Jr. et al.recognizes that improved

agent utilization would be the result of using statistics to assign tasks to the agents of Steinlicht.

Claim 5 -- Steinlicht at column 2, lines 20-68; column 3, lines 1-26 teaches Claim 5's "A

system for storing an association between each of two or more intelligent agents and one of a

plurality of mutually exclusive groups of computer implemented tasks, the system having a

processor means, storage means and input/output means, the system comprising:

means for receiving data assessing at least two user assessment variables for each of said tasks;"

Note that the equivalent of the "user assessment variables" in Steinlicht are such considerations as

a) whether the agent group speaks English or Spanish, b) whether the agent can handle credit

cards, etc.

Steinlicht at col. 8, lines 63-65 also teaches claim 5's "means for storing in said storage

means an association linking each of said intelligent agents with one of said statistically distinct

clusters."

Steinlicht does not, however teach claim 5's "means for performing multi variate statistical

analyses on said data to determine at least as many statistically distinct groups of tasks as there

are intelligent agents to assign;"

Note that this clause in claim 5 divides the tasks among the available agents, but the clause

also allows for the creation of more clusters than agents. This is the same as determining the

minimum number of agents required to perform the task. The very next clause in the claim calls

for a one-to-one linking of agents to clusters. The creation of more clusters than agents would be

an indication that more agents are required to solve the problem. The number of extra clusters

show exactly how many newly available agents are required.

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Optimized agent utilization is a highly desirable feature in the intelligent agent art due to

its ability to increase the productivity of each agent. Donaghue, Jr. et al.recognizes that improved

agent utilization would be the result of using statistics to assign tasks to the agents of Steinlicht.

Claim 8 -- Steinlicht at column 2, lines 20-68; column 3, lines 1-26 teaches Claim 8's :

"A computer program product having a computer readable medium having computer program logic recorded thereon for

associating each of two or more intelligent agents with one of a plurality of mutually exclusive groups of computer

implemented tasks, said computer program product comprising:

computer program product means having computer readable means for receiving data assessing at least two user

assessment variables for each of said tasks;"

Note that the equivalent of the "user assessment variables" in Steinlicht are such considerations as

a) whether the agent group speaks English or Spanish, b) whether the agent can handle credit

cards, etc.

Steinlicht at col. 8, lines 63-65 also teaches claim 8's "computer program product means

having computer readable means for storing in said storage means an association linking each of

said intelligent agents with one of said statistically distinct clusters."

Steinlicht does not, however teach claim 8's "computer program product means having

computer readable means for performing multi variate statistical analyses on said data to

determine at least as many statistically distinct groups of tasks as there are intelligent agents to

assign;"

Note that this clause in claim 8 divides the tasks among the available agents, but the clause

also allows for the creation of more clusters than agents. This is the same as determining the

minimum number of agents required to perform the task. The very next clause in the claim calls

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al. discloses that the result of using statistical assignment of agents to their tasks would produce optimized agent utilization over the prior art. (Donaghue, Jr. et al. Column 10 lines 26-29.)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the statistical analysis disclosed in Donaghue, Jr. et al. to assign agents to their tasks in Steinlicht.

Optimized agent utilization is a highly desirable feature in the intelligent agent art due to its ability to increase the productivity of each agent. Donaghue, Jr. et al.recognizes that improved agent utilization would be the result of using statistics to assign tasks to the agents of Steinlicht.

Allowable Subject Matter

10.   Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A.   Bonnell et al. (U.S. Patent Number 5,655,081) discloses a system for monitoring and

managing computer resources and applications across a distributed computing environment using

an intelligent autonomous agent architecture.

B.   Burt et al. (U.S. Patent Number 5,682,482) discloses a system for facilitating the

supplying of services in a network.

C.   Carney (U.S. Patent Number 5,784,452) discloses a telephony call center with agent work

groups.

D.   Cave (U.S. Patent Number 5,327,490) discloses a system and method for controlling call

placement rate for telephone communication systems.

E.   Cheung (U.S. Patent Number 4,694,483) discloses a system for routing incoming phone

calls to a plurality of agent positions.

F.   Cook et al. (U. S. Patent Number 5,727,950) discloses an agent based instruction system

and method.

G.   Goodridge et al. (U. S. Patent Number 5,799,297) discloses a task workflow management

system and method.

H.   Hamner et al. (U. S. Patent Number 5,796,951) discloses a system for displaying

information relating to a computer network including devices with tasks performable on those

devices.

I.   Kohler et al. (U. S. Patent Number 5,206,903) discloses an automatic call distribution

based on matching required skills with agent skills.

J.   Kohler et al. (U. S. Patent Number 5,721,770) discloses agent vectoring programmably

conditionally assigning agents agents to various tasks including tasks other than handling of

waiting calls.

K.   Lagarde et al. (U. S. Patent Number 5,710,918) discloses a method for distributed task

fulfillment of web browser requests.

L.   Lagarde et al. (U. S. Patent Number 5,745,754) discloses a sub-agent for fulfilling

requests of a web browser using an intelligent agent and providing a report.

M.   Lagarde et al. (U. S. Patent Number 5,761,663) discloses a method for distributed task

fulfillment of web browser requests.

N.   Leggett (U. S. Patent Number 5,185,780) discloses a method for predicting agent

requirements in a force management system.

O.   McAtee (U. S. Patent Number 5,301,320) discloses a workflow management and control

system.

P.   Rogers et al. (U. S. Patent Number 5,752,246) discloses a service agent for fulfilling

requests of a web browser.

Q.   Rosen (U. S. Patent Number 5,557,518) discloses trusted agents for open electronic

commerce.

R.   Smith et al. (U. S. Patent Number 5,517,566) discloses a method for allocating agent

resources to multliple telephone call campaigns.

S.   Smith et al.   (U. S. Patent Number 5,592,543) discloses a method for allocating agent

resources to multliple telephone call campaigns.

T.   Suarez (U. S. Patent Number 5,790,789) discloses a method and architecture for the

creation, control and development of services within a distributed computer environment.

12.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Wilbert L. Starks, Jr. whose telephone number is (703) 305-0027.

Alternatively, inquiries may be directed to Supervising Patent Examiner Tariq Hafiz whose

telephone number is (703) 305-9643.

wls

September 24, 1998

Tariq R. Hafiz
Supervisory Patent Examiner
Technology Center 2700